



The Scottish Parliament
Pàrlamaid na h-Alba

Economy, Jobs and Fair Work Committee

Paul Wheelhouse
Minister for Minister for Business,
Innovation and Energy

The Scottish Parliament
Edinburgh
EH99 1SP

Tel: (0131) 348 5947
RNID Typetalk 18001 0131 348 5947
economyjobsandfairwork@parliament.scot

Sent by email only

30 June 2017

Dear Paul

Draft Energy Strategy – EJFW Committee response

Following the Committee's scrutiny of the Scottish Government's Draft Climate Change Plan, we were keen to input to the Draft Energy Strategy. I am aware that the Clerks have spoken with your officials on the matter. Attached with this letter are: a paper outlining the evidence we heard and recommendations, a note of the several visits that members undertook, and copies of the written submissions received.

The paper sets out in detail what we have heard and have concluded from the evidence, the main headings addressing an overview and international perspective, Scotland's Energy Efficiency Programme, and district heating /hydrogen. One further point, and which did not feature in our evidence, relates to the Grenfell Tower tragedy. I understand a ministerial group is currently reviewing fire safety and buildings regulations in Scotland, but I would be grateful if you could provide an update on that work, particularly in terms of any health and safety concerns arising from energy efficiency measures.

I hope this letter and accompanying information will be helpful in your formulation of the final energy strategy for Scotland and that we can expect a response in the usual timeframe.

Kind regards

Gordon Lindhurst MSP
Convener

Economy, Jobs and Fair Work Committee

Draft Energy Strategy – EJFW Committee’s Response

Introduction

1. Consideration of the Scottish Government’s [Draft Scottish Energy Strategy: The Future of Energy in Scotland](#) has taken place over four public evidence sessions, several visits and one private briefing on Blackstart. In terms of written evidence, we received eight [submissions](#).
2. Also of relevance to this work are the Committee’s [Report on the Draft Budget 2017-18](#), its [response](#) to the [Draft Climate Change Plan - the draft Third Report on Policies and Proposals 2017-2032](#), and the predecessor committee’s [Plugged-in Switched-on Charged-up: Ensuring Scotland’s Energy Security report](#) from 2015.
3. The end of May was the deadline for responses to the Scottish Government’s consultation. However, officials are aware the Convener will be writing to them to set out the Committee’s views before the end of June.

Themes

Overview and international perspective

4. This [roundtable](#) session on 23 May covered plenty of ground, including issues also highlighted in the Committee’s earlier report on the Climate Change Plan (CCP), such as transparency, thermal capacity, and behaviour change.

Transparency

5. In the Committee’s work on the CCP, the sister document to the ES, the “whole-system approach” was commended, but – with modelling based on assumptions not shared – we found “this approach lacks transparency”. More details were sought on budgets, targets, timelines and policies to be included in the final CCP, noting also the lack of policy detail for Scotland’s Energy Efficiency Programme (SEEP).
6. A number of witnesses made similar points about the ES. Scottish Renewables welcomed the strategy itself (as did the majority of witnesses) and “the priorities and vision that it sets out” along with its “ambitious and feasible” targets. However, they said it was “difficult to see from reading the document exactly how we are going to achieve them” (Col 3).
7. Joan MacNaughton told the Committee—

“I was struck by the fact that the level of detail in the draft energy strategy is somewhat lower than it is in the draft climate change plan.” (Col 3)
8. University of Edinburgh’s Mark Winskell described “quite a short document” when matched against the CCP; one with “no integrated analysis of the energy system.” He would have preferred to see the two documents “joined

up”, with the CCP “on the road to the 2050 vision” and providing “the long-term picture”. (Col 4)

9. He said—

“...it is a world of managing uncertainties, keeping open options that are promising and understanding the key decision points in the transition.” (Col 4)

10. Scottish Renewables recognised that the ES was “deliberately quite flexible” in order to “future-proof” and not rule out any options prematurely, but decision making would eventually be necessary and —

“We need to understand what those critical decision points are along the pathway to 2030 and 2050 and who owns the decisions.” (Col 9)

11. Ownership of decision-making is something that we will return to for the question of whether a national agency is required to oversee the transition of the energy system, a task various described as “massive” (Col 25), happening at “an incredible pace” (Col 15), and “an evolving picture” (Col 21). There were, as National Grid put it, “a number of possible futures”. (Col 20)

12. WWF Scotland wanted to see “a little more detail in the strategy in terms of road maps for particular sectors, including heat and transport” and “more actions for delivery”, particularly for heat decarbonisation for new builds. (Col 6). They also said--

“...one area in which the strategy could benefit from more detail and perhaps more ambition is demand reduction, and the Scottish Government has a lot of levers to deliver that.” (Col 10)

13. In terms of detail, a “zero-carbon home standard” was highlighted by Joan MacNaughton, a UK policy that was to have been enacted for all new build from 2016 but was “overturned” after the 2015 election. She said there was “no reason at all” not to commit to that kind of requirement in the ES. (Col 25)

14. Of the feasibility of the 50% renewables target, Mark Winskell said WWF Scotland had done some work, but, without the Scottish Government’s own analysis, it was difficult to see the implications for different sectors—

“...we have not seen from the Scottish Government any modelling or representation of what its version of meeting that [renewables] target looks like.” (Col 11)

15. WWF Scotland described the ES as “very good” at pointing to where “we want to be” but “not so good in its action plan for delivery, particularly in areas such as heat and transport”. (Col 28)

16. Asked about communicating the benefits of the strategy to the public, Scottish Renewables suggested the ES was “quite light in such areas” when what was required was a “large marketing and communications plan”. (Col 13)

17. **The Committee would like to see more detail in the final Energy Strategy addressing: key decision points anticipated over its lifespan and where ownership of those decisions lie, road maps for all the sectors (heat and transport as well as power), demand reduction (a significant policy area over which the Scottish Government has control), the modelling or analysis underpinning the renewables target, and public engagement. The Committee heard from witnesses that the draft is strong on direction but not delivery. While recognising that a strategy is by definition high level, more macro than micro, and this document tells us where we want to be, we also need to know how we get there. Public awareness and buy-in will be a crucial factor in the strategy's success and we recommend it be afforded a greater focus in the final document.**

Thermal capacity

18. In its response to the CCP, the Committee contrasted the Scottish Government's desire for additional thermal capacity with evidence from the National Grid that it was not required. We undertook to further examine the matter in our work on the ES.
19. Joan MacNaughton suggested "the subject merits further thought" but emphasised the rapid development of technologies to manage a system with "huge penetration of renewables". (Col 3)
20. National Grid saw thermal capacity as "a useful part" of the energy mix, particularly "when the wind is not blowing, the sun is not shining or we have a particularly dry winter". NG's Duncan Burt described the "additional challenges" of operating the grid minus any large power stations. He said they were "still working on the timing of investment and the technical measures" to be in place for the likely closure of nuclear sites towards the end of the next decade—
- "It is not absolutely essential for the grid...Nevertheless, while we can operate without it, it is helpful to have thermal generation to back up and support the grid." (Col 19)
21. Also looking to the future, Energy UK spoke of the need to "look at all sources of input" in the interests of having "a more dynamic grid" and how it would be important "to provide investors with confidence about where things are going". (Col 19)
22. WWF Scotland referred to a piece of research they had commissioned into resilience "post-Hunterston, post-Torness, post-Peterhead" showing security of supply "to meet peak demand" even during a long period of low renewables—
- "We do not have to think in the old norms of the past, which are all about base-load generation. We have a much more distributed, decentralised model in which new system services are provided by new technologies." (Cols 19 and 20)

23. Scottish Power/Power Energy Networks (SPEN) set out its concerns—

“...it is our firm view that there is a continued need for large synchronous generators until the benefits to the system that they provide can be supplied from alternative sources.” (Written submission, SPEN)

24. Duncan Burt said that pumped hydro storage, the growth of battery storage, distributed energy and “the potential for further interconnection into Scotland” all “impinge on the question of resilience” beyond the lifespan of the large power stations. (Col 20)

25. Suggesting that investment in a large power station was unlikely either in England or Scotland currently, Joan MacNaughton believed current arrangements were “not conducive” to such a decision. (Col 21)

26. Addressing the post-Brexit picture, she said interconnection was still possible even outside of a more integrated EU energy market, provided we were “serious” in negotiation—

“It is not impossible and it helps that our system operator has played a leading role in that integration in years past and is well respected.” (Col 22)

27. Energy UK advised not underestimating “the value of interconnectivity within the GB system”, as well as Ireland, Europe, and Norway. They said there was “significant economic logic” in keeping that interconnectivity with Europe, particularly for electricity. (Cols 22-23) Regarding Norway, it is noted that NorthConnect is an ongoing project to connect the network in Scotland directly to that of mainland Europe for the first time. The Scottish end will be at Haven Bay, north of Peterhead, the operation expected to be ready by 2022.

28. It was a theme picked up by Duncan Burt, who talked about “the burden of security of supply” being spread over a larger market—

“Enlarging the market within which we trade increases the resilience of our supply and reduces costs to consumers.” (Col 23)

29. The approach to energy security post-Brexit was seen in less positive terms by SPEN, expressing concern that—

“...the UK places an overreliance on EU interconnectors”. (Written submission, SPEN)

30. The question of thermal capacity is one that is rather easier to ask than to answer. It seems the current arrangements at the GB level are not conducive to new investment, but beyond this it is difficult to find common ground. The Committee heard about the huge penetration of renewables, the potential and development of a more dynamic grid and the added challenges this may bring. We were encouraged to move on from the old norms of the past and the emphasis given to base-load while being told of the ongoing need for large generators and concerns at an overreliance on interconnectors post-Brexit. The Committee

therefore asks the Scottish Government to keep the matter under review and in the interests of clarity we believe a piece of independent research might usefully inform further assessment.

Behavioural change

31. The Committee stated in its response to the Climate Change Plan that it was “surprised by the lack of detail in the CCP on any actions planned to address the behavioural change required to reduce heat demand” and “the final CCP must communicate clear messages about the targets and the behaviour changes required to meet them”.
32. As Changeworks’ Teresa Bray told the Committee on 30 May—

“We will not be able to get just a technological fix – we have to think about the people as well.” (Col 2)
33. Duncan Burt talked about “the significant opportunity” of demand-side response (DSR), the National Grid’s “Power Responsive” being a GB-wide initiative directed at commercial users “to lower the carbon footprint of the energy and reduce their costs” at times when renewable input is higher and energy prices lower. (Col 23) He hoped smart metering could have a similarly “beneficial impact”. (Col 24)
34. The “massive challenge with consumer engagement and getting into people’s homes” was described by WWF Scotland. Gina Hanrahan saw a similar need to tackle the commercial sector as well, when it came to energy efficiency and decarbonisation. She suggested there could be opportunities to “maximise the co-benefits of doing commercial and non-domestic at the same time as domestic” in respect of the design and delivery of SEEP. (Col 25)
35. The phrase “enlightened self-interest” was used by Joan MacNaughton in relation to showing businesses the benefits in cutting their costs, albeit she accepted energy efficiency may not be a priority for many SMEs. (Col 26)
36. She was wary of placing too much emphasis placed on smart metering—

“I think that smart meters will be the new dog that does not bark, in the same way that people do not switch.” (Col 27)
37. At the later meeting, on 30 May, Teresa Bray told the Committee it was “not just about telling people”, that “information is different to advice”, and guidance for their particular circumstances was what people wanted—

“There is a science behind that and there are specialists in it, but the programme has to be supported.” (Col 19)
38. Elizabeth Leighton of Existing Homes Alliance spoke about engaging the wider public with “the vision for 2050”, not knocking on doors offering a product they might not want—

“People want warmer, more comfortable homes with affordable bills, so they need tailored solutions.” (Col 21)

39. Fife Council’s Janet Archibald said we needed “people to buy in, not to be sold to”, that face-to-face engagement was better than leaving answerphone messages, and ideally “get people voting with their feet” by coming to meetings and “buying into projects”. (Col 210)

40. Professor Haszeldine spoke of “progressive nudging” and said—

“It is a question of having a strong Government mission that says that we will do the right thing because it will lead to better air quality, a better environment and greater sustainability.” (Col 45)

41. The demand side of the changing energy equation is crucial and merits greater emphasis. A technological fix, the Committee heard, was not enough – the human dimension must be factored in. One witness suggested that expectations for smart meters could prove overly optimistic in a similar way to the reluctance shown by a majority of energy consumers to switch providers. We were told variously that policy ought to be directed at the “enlightened self-interest” of SMEs, “progressive nudging”, and tailored solutions, for people not to be sold to but able to buy in. The Committee believes the strategy should set out more detail on the demand side and behaviour change.

Scotland’s Energy Efficiency Programme

42. The issues for the Committee to highlight from the first [panel](#) on 30 May could be evaluation of energy efficiency schemes, the balance of policy between n local and national (plus the suggestion of a gap between national policy and local reality), and complexity of energy policy and the case for a national agency to oversee it.

Evaluation

43. Elizabeth Leighton of Existing Homes Alliance said that when designing SEEP, it was agreed “the many years of experience of loan schemes” should be evaluated. This review, she believed, had done be undertaken. (Col 18)

44. She told the Committee—

“...there has not been a comprehensive look at what has worked and why, what the successful triggers have been, how they have been marketed and why people have not followed through once they have made inquiries. The answers to those questions would be valuable in designing incentives for the future.” (Col 18)

45. The Committee requests that the Scottish Government informs it about what evaluations have been undertaken of previous energy efficiency schemes. If no evaluations have been completed, the Committee asks the Scottish Government to clarify how it has monitored the progress of interventions to ensure best value for public funds and to inform the development of more effective schemes.

National and local policy

46. Elizabeth Leighton described Scotland as being “in the fortunate position of having a lot of excellent building blocks in place” to develop SEEP. She said the Home Energy Efficiency Programme (HEEP) was “working relatively well” and there “a good blend of local area-based schemes plus a national fuel poverty scheme”—

“That balance of local and national is good.” (Col 3)

47. She referred to the Warmer Homes Scotland programme as “the gold standard” for performance and quality assurance, and praised “the very good, nationally funded advice service Home Energy Scotland” which she felt could “be built on” to support households “before and after measures are delivered”. (Col 4)

48. Leadership was key, she said—

“...right from the top, with the First Minister and her Cabinet saying that energy efficiency is one of their number one priorities – and the next several governments.” (Col 4)

49. On the subject of energy and heat demand reduction over the timeframe of SEEP and the CCP, she expressed disappointment. Six percent in the domestic sector “should be much more ambitious”. In reality, she said, a 15 percent rise in heat demand was predicted, meaning only nine percent was being cut off that figure. (Col 5)

50. Fife Council’s Janet Archibald addressed the non-domestic side and spoke of the barriers being “enormous” and timescales “very challenging”. (Col 4) She felt an independent delivery body could avoid having “a patchwork quilt of effort” between local authorities, though there was a risk of creating “a lack of ownership”. (Cols 9-10)

51. She said—

“I am getting a feeling that we will have less money to do things at a time when we have a greater ambition to fulfil and we have to take on the hard-to-do projects, because we have done the best – and the best-paying – projects.” (Col 10)

52. By way of example, she cited five high schools in Fife with under-floor heating nearing the end of its life—

“Those five high schools were built in the 1960s, they are not very well insulated and are full of asbestos. One of them is electrically heated, full of asbestos and listed.” (Col 13)

53. Addressing timescales for domestic dwellings, Teresa Bray pointed to the difficulty of a 15-20 year programme, particularly for people living in fuel

poverty. She said there “has to be a national programme to deal with those who are most in need”. (Col 25)

54. Elizabeth Leighton spoke of a balance in delivery between the national and local, with local target setting for heat, energy efficiency and fuel poverty strategies, and flexibility for local approaches (recognising that some councils would deliver more than others)—

“However, oversight would be needed to ensure that the local targets add up across the piece and meet the national target.” (Cols 25-26)

- 55. The Committee heard that a good blend exists of local and national initiatives. The work of Home Energy Scotland was praised in that context. Leadership was said to be key – energy efficiency to be pursued as a priority at the highest level. The Committee encourages policy makers and practitioners to maintain that balance between the national and local in mind in the interests of providing impetus, directing resources, avoiding any lack of ownership, and ensuring that vulnerable households, especially those living in fuel poverty, are not overlooked in the focus on long-term energy efficiency programmes.**

Complexity

56. The range of policies, initiatives, targets, sectors etc. covered in the ES is huge, an undertaking far from straightforward. The suggestion, therefore, of creating an independent body to provide oversight, perhaps something along the lines of the Danish Energy Agency, was supported by a number of witnesses.

57. Elizabeth Leighton spoke of success being dependent on “the right profile and...right leadership and resources that are needed to deliver it”. She said—

“The approach will not succeed if it simply sits on the edge of a few civil servants’ desks.” (Col 7)

58. When targets have been set and the policy framework put in place, “it is for an independent body to deliver and report on the strategy”. (Col 7)

59. She pointed out SEEP would run over several administrations (over 20 plus years), have a big budget (estimated at £10 billion but perhaps more), and likely require to fulfil a role that encompasses “regulation, research, innovation and a host of other issues”. (Col 7)

60. Janet Archibald told the Committee—

“The timescale for a grand project of reducing our emissions is way longer than any electoral cycle, let alone any budget-setting cycle.” (Col 9)

61. The particular approach to large-scale projects such as the Olympics and the Commonwealth Games were mentioned, as was the role of Transport Scotland in major infrastructure projects. (Cols 7-8)

62. Teresa Bray warned against the pressure that would be placed on civil servants and local authorities in the absence of such a body, citing the procurement of schools in Edinburgh as an example of what can happen “when there are not strong managing agents”. (Col 8)
63. She said quality was “a big issue” and “we have to ensure that standards are set for quality and that the infrastructure is in place.” (Col 8)
64. During the earlier evidence, from the roundtable session on 23 May, Community Energy Scotland suggested the need for “some form of coordinating organisation”. Such a body could help develop new projects and generate “economies of scale”. (Col 29).
65. Scottish Renewables reported that many conversations on the nature of such a body had taken place but it changed “depending on the stakeholders in the room”. They agreed with the ES document, that any such body “must add value” and not duplicate existing work—
- “We are coming round to the view that it could be a very useful mechanism as a front door...A one-stop shop begins to open up options for communities and to help them to travel through the project development process.” (Cols 29-30)
66. Joan MacNaughton saw “a lack of machinery for ensuring that the overall delivery is integrated”, with different polices sitting in different corners of the Scottish Government. The Cabinet Secretary-led committee approach had taken us to the point of expressing the aspirations, but “how those are executed is just as important”. (Col 30)
67. She said—
- We cannot have oversight through a piece of policy machinery at the political level. We need something that is closer to the practical side.” (Col 30)
68. Mark Winskell drew attention to a problem that “to some extent, the Government is trying to be the analytical body as well as the implementation body”. (Col 31)
69. Joan MacNaughton believed there to be a case for something “distinct from the economic regulator and from government” and with the ability “to spot problems before they become a matter of post hoc accountability.” (Col 30) The focus of such a body would be on “implementation and separating that from the policy development process”. (Col 31)
70. **Given the scale and complexity of the many policy strands covered by the strategy, it will be important to ensure good governance, policy expertise, cross-party buy-in (as there has been for climate change) and long-term ownership. Sitting on the edge of a few civil servants’ desks, we were told, will not be enough. This is a strategy the lifespan of which extends beyond the usual electoral and budgetary cycles. The**

Committee on Climate Change was mentioned, as was the Danish Energy Agency, and the model of Transport Scotland for large infrastructure projects. Another witness underlined the importance of a body to spot problems before they became “a matter of post hoc accountability”. In the interests of ensuring continuity of delivery for the strategy, the Committee recommends a long term framework be put in place; one which could include the establishment of an independent body.

District heating/Hydrogen

71. As well as questions specifically around district heating and hydrogen from the second [panel](#) on 30 May, the other aspect to draw out here might be decentralisation.

District heating

72. In its response to the CCP, the Committee indicated it would return to the issue of district heating, having seen for itself from a visit to a scheme in Dundee the benefits for residents; and learning of the barriers in the form of housing tenure, resources and consumer protection.
73. Keith MacLean said there was “very little practical experience” of applying hydrogen and district heating as solutions to the carbon problem—
- “...we need to undertake appropriate pilot projects to gather knowledge and experience before we can make any of the key decisions that need to be made about decarbonisation.” (Col 31)
74. He described “the dilemma” of the economics of district heating requiring “a certain customer density” but the most densely populated areas were “the most difficult areas to put district heating into”. He questioned the economics of the approach. (Col 32)
75. The University of Edinburgh’s Professor Haszeldine cautioned against “a one-size-fits-all solution” and underlined “a huge infrastructure cost”. (Col 32) He described the record of district heating in the UK as “patchy”. (Col 33)
76. SGN’s David Handley said—
- “District heating is the right solution in specific areas, but lots of other solutions also need to play a part and we need to promote those as well to decarbonise heat.” (Col 33)
77. Scottish Cities Alliance said that district heating had “been successful where they have been put into social housing” and pointed out that tenement blocks could be made 70 percent more efficient—
- “I am not saying that district heating is a panacea, but at least it is something with which to tackle the difficult problem of fuel poverty”. (Col 33)

78. District heating in the view of Keith MacLean was “not a low-carbon technology”. He said most of the schemes across Europe, Poland included, used fossil fuels “because they are cheap enough”. (Col 35)
79. Professor Haszeldine spoke of “the dual motives” of cheap, efficient heat supply and low-carbon. He suggested an emphasis on district heating would mean “you would reach a cul-de-sac around 2030” in efforts to decarbonise. (Col 35)
- 80. There are divergent views on district heating. The Committee heard it was the right solution in specific areas and can be used to tackle fuel poverty, but that its record was patchy and might lead to a policy cul-de-sac. Members had the opportunity to see for themselves such schemes in operation in Dundee and the University of St Andrews. It is one of a number of possible solutions to decarbonising heat, but we note the costs involved and the importance of significant energy efficiency measures to mitigate such costs.**

Hydrogen

81. The Committee noted in its response to the CCP the potential role of hydrogen as a replacement for gas in heating homes. We said we would examine the policy again in our work on the ES.
82. Keith MacLean contrasted the risks of district heating with “an alternative solution” to avoid “a lot of disruption”, that of the continued use of the existing gas network—
- “That is why it is really important, before we start looking at mass conversion to district heating or electrification, to understand clearly at a national level what the options will be for using hydrogen in place of natural gas.” (Col 35)
83. The approach was described by Professor Haszeldine as “a longer-term vision” to allow us to become zero carbon nationally rather than just 20-30 percent. (Col 35)
84. SGN said they were replacing iron pipes with plastic ones and—
- “It is important to ensure that we are using the assets that we have available, because that helps us to deliver that decarbonised heat at least cost.” (Col 40)
85. Scottish Cities Alliance described hydrogen “as the new word around the place” after a previously poor reputation. They suggested it had “a massive role to play” but “a lot of people have to be convinced about the cost”. SGN was going to undertake a trial in Scotland. One in Leeds had been “ambitious and fantastic” but there remained questions “around the final numbers”. (Col 36)
86. This was echoed by Professor Haszeldine who said it was “impossible to envisage producing hydrogen at cheap cost locally”. (Col 40)

87. He suggested, though, we should recognise “the correlation between making hydrogen available for heating networks and making it available for transport”—

“That could be much more effective and cost less than the electrification of vehicles.” (Col 41)

88. Keith MacLean warned against the cost of moving too fast with heat decarbonisation, whether hydrogen or district heating, “without having done the preparatory work”. (Col 41)

89. SGN’s David Handley said we were “at the beginning of the curve” with hydrogen and that feasibility studies around “broadening the bandwidth to allow different gases to go through”, “increasing the blend” and other aspects related to what worked and what was safe would probably take “at least the next five years”. (Cols 41-42)

90. In terms of projects, pilots, new technology and not being risk-averse, the Committee heard evidence during its work on the Climate Change Plan and also in its visit to Edinburgh Centre for Carbon Innovation (ECCI).

91. Gillian Hurding of Community Energy Scotland had told us “more innovative solutions and technologies” were expected but communities were “taking on a huge risk”. She asked how failure would impact on other smart grid projects in the future. The strategy recognised the expectation that some innovative projects would fail, but she said the impacts on local communities ought to be considered—

“That is not to say that there is a lack of motivation, ambition or even capability, but there is concern around sharing that risk.” (OR, 31 January, Col 25)

92. On the ECCI visit we were told nobody really knows what new or developing technology will work or be viable in 10 years and that the ethos should be one of “try it and if it doesn’t work, move on”. In other words, failure should be considered a stepping stone rather than a millstone. (Note of written visit to ECCI)

93. The Committee recognises the need for a mix of approaches to the decarbonisation of heat and that the feasibility of hydrogen is still in its early stages. The members who visited the Levenmouth Community Energy Project were impressed with the pioneering work they were able to see for themselves. And we would underline Edinburgh Centre for Carbon Innovation’s encouragement of a less risk-averse culture and Community Energy Scotland’s call for consideration of the impact of failure for communities and future smart grid schemes.

Decentralisation

94. The theme of decentralism was put in pithy terms by Keith MacLean, who pointed out that electrification and decarbonised gas were “much more centralised solutions” but it was hard to say whether that or localisation was the better approach—

“Ultimately, it will be heat in our homes, which is what we are looking for. It will be hot water, heat for cooking and all those things...” (Col 39)

95. He said it was impractical for somebody in the street to choose hydrogen, someone else methane, another person biogas. Any “significant infrastructure investments” in electrification or utilising the existing gas grids would need to be “much more national in character”. An open mind on a central or local role being the best way forward was advised. (Col 39)

96. Professor Haszeldine suggested a cautious approach, as Scotland had grappled with heat decarbonisation “for only a few years”. He said—

“We should let those 1,000 flowers bloom, so the regulation, the policy and the approach should permit them to pop up and emerge where local knowledge and enthusiasm permit that to happen.” (Col 40)

97. However, he also emphasised that “the basic energy vectors” will remain centrally provided—

“Even if everybody has some solar power on their house, they will still need electricity at night... Those energy sources will require national back-up systems and national infrastructure systems.” (Col 40)

98. In written evidence, COSLA described the expectations being placed on local authorities as “considerable” and called for “a tight alignment of resources between all key stakeholders, local flexibility and long term financial security”. They said it was “essential” that the Scottish Government set out “a clear roadmap” for timeframes, decision points and long-term aims. (Written submission, COSLA)

- 99. The Committee recognises the need to strike a balance between the local and the national when it comes to heat decarbonisation. If local authorities are to fulfil the contribution expected of them then they must be supported accordingly.**

Grid

100. The [evidence](#) on 13 June could provide a focus around [grid constraints](#), [transmission charging](#), and [timescales for Blackstart](#).

Grid constraints

101. Although the issue of thermal was addressed at the roundtable session on 23 May, it arose again on 13 June in the wider context of grid capacity, constraints and resilience.

102. National Grid's Duncan Burt told the Committee "grid constraints need to be addressed – they are being addressed". He said the Western HVDC link and the Moray Firth direct-current link would "relieve the residual major national constraints on the electrical network in Scotland". (Col 2)

103. He said—

"An absolutely critical part of the investment environment is that people understand the risks around planning and connection and that, wherever possible, in balance with the democratic process around planning and construction, those risks are removed." (Cols 2-3)

104. Addressing the need for a balance between extra capacity and not always being able to make use of all the energy available, Professor Bell of the UK Energy Research Centre said—

"Reinforcing the network clearly comes at a cost, so it is important that we strike the right balance." (Col 3)

105. Ofgem concurred with that view, citing the importance of investment being economic and efficient, even when the situation "constantly shifts" with developments in technology and the changing energy mix. (Col 3)

106. Looking at what Scotland's energy picture might be in the 2020s and 30s, National Grid carried out scenario planning, from which it envisaged "a good mix of low-carbon sources – thermal generation with carbon capture and storage, nuclear generation and renewables". Duncan Burt said—

"...we are confident that we have the tools and resources that we need to balance and retain the security of the grid." (Col 5)

107. Of Peterhead, the last large thermal plant in Scotland, he said "it does not run often" and there were "regular periods" when we were running completely on renewable power. (Col 5)

108. He said as the number of large power stations reduced that "ideally" they should be spread across the UK "to give us options for how we manage the grid"—

"We are considering that closely with the Scottish companies and the industry as a whole". (Col 5)

109. SPEN described the closure of various power stations from 2020 and 2030 as having "the potential to present significant challenges on both a Scotland and GB wide basis". They said the future "operational status of large thermal power stations will be a determining factor in the speed with which any Blackstart recovery can be effected" and that decarbonisation of the electricity system would give rise "to extended recovery profiles in many areas of GB, including Scotland". (Written submission, SPEN)

110. Energy UK encouraged us “to throw away the old rule book” and be “more collaborative and collegiate in order to understand what the new possibilities are”. She said—

“It is not about picking one winner, because the solution could be a whole range of them working in tandem.” (Col 7)

111. Duncan Burt said that Carbon Capture and Storage (CCS) had “an important role” in a low-carbon grid and making use of existing sites would be “entirely consistent with the strategies that have been adopted by most power companies in the UK”. (Col 8)

112. Professor Bell suggested it was “up to the market to decide which sites to develop” and existing sites offered “obvious advantages”. He said—

“We should look at how the whole package is considered, and the locational value should be taken into account”. (Cols 8-9)

113. The Committee endorses the more collaborative and collegiate approach sought by Energy UK in the interests of better understanding and realising the “new possibilities” for the grid; and to meet the three-way needs of energy security, decarbonisation and affordability to the consumer. A cooperative ethos will be particularly important in future support for Carbon Capture and Storage from both the Scottish Government and the UK Government, given the emphasis given to CCS both in the strategy and the Climate Change Plan.

Transmission charging

114. Transmission charging links directly to issues around new thermal, grid capacity and resilience, and cost to the consumer.

115. It was an issue considered in some depth by our predecessor committee in its security of supply inquiry in October 2015. The then Economy, Energy and Tourism Committee described “something of a vexatious matter”; the Scottish Government of the view that the charge discriminated against thermal generation here while National Grid saw it as an effective signal to incentivise investment decisions and of benefit to Scottish energy consumers.

116. The EET Committee concluded that given the complexities around reform of the process, this having taken eight years, including a judicial review, further reform was “unlikely in the near future”. However it said “there should be greater clarity when it comes to communicating the costs and benefits to customers and generators, and also explaining how the charging regime fits with other public policy aims.”

117. It is not clear if much has changed in the 18 months between that report and now.

118. Ofgem told this Committee the two components of transmission charging were “a cost-reflective charge and a residual charge”, meaning that what householders, businesses or generators pay will “depend on where they are located and how they use the transmission network”. They said that charges for wind generators had reduced “by approaching 20 percent”. (Col 10) [a figure subsequently clarified as being 53 percent]
119. National Grid described the charge as “a locational signal...to indicate where it would be more expensive, or less expensive, to connect generation to the system”. (Col 10)
120. Duncan Burt also said discussions were currently taking place as SSE has “proposed a modification to the charging arrangements for thermal generation in Scotland” and NG was “supporting the adjustments”. He said—
- “That reflects the fact that the way in which the network is being used is continuing to change – indeed, it is changing more rapidly than we would have expected even three or four years ago, as a result of the continued growth of renewables.” (Col 10)
121. **The Economy, Energy and Tourism Committee looked at the matter of transmission charging 18 months ago and concluded then, given the complexities around eight years of reform (including a judicial review), further reform was “unlikely in the near future”, whatever the arguments around the charge. However, given National Grid’s indication of likely “adjustments” and the rapidity of recent changes, as described by them, this would appear more of a live issue than might have been expected. We wish to be kept updated by National Grid and Ofgem as discussions progress.**

Blackstart

122. Blackstart was also covered in the EET Committee’s security of supply inquiry, the report of which—
- “...found no credence in the more excitable ‘minutes-away-from-blackout’ coverage that tends to attach itself to this subject. It is important, of course, that a considered, credible and balanced approach is taken with planning, and to that end, in common with the Scottish Government, we welcome the commitment of National Grid to bring to the Scottish Parliament an annual capacity assessment for review.”
123. Asked about the role of thermal in the planning, National Grid’s Duncan Burt said—
- “We have arrangements in place to use power stations in northern England alongside those available in Scotland, should they be needed in order to facilitate a speedy blackstart of Scotland.” (Col 13)
124. He talked of “a spinal strategy” enabling them to put “a larger proportion of the network together earlier and connect generation into it as it

comes online”, telling the Committee the first stage of that strategy had been “to merge the two historical plans for the north and south of Scotland into a single zone for Scotland’s restart”. (Col 13)

125. In terms of timings for having to restart the system from nothing, in the scenario of a major weather storm or malign act, he said the aim was “clearly to maintain consistency of restoration times” as set out for the last five years. He said they planned on the basis of giving policy makers “choice in how to direct power after the first 24 hours” though “it could be several days” before power was returned to everyone, and he underscored the importance of the local response—

“That is why it is an intimate role of local government to work on resilience plans for each region, which build to national resilience plans involving the police, hospitals and everything else.” (Col 14)

126. He said NG expected to have “the vast bulk of the network back and energised in the first 24 hours”, resilience being “managed at a regional level, or at a national level for Scotland and Wales”. Discussions with Government were ongoing, he said, to ensure the right plans were in place “while the electrical system goes through significant transformation”. Interconnectors were “an integral part of the GB network” and “could form a fundamental part of a blackstart”. (Col 15)

127. SPEN took a different view, raising “questions around system resilience in a Scottish context, and the mix and availability of sufficient generation capacity in a GB context”. Furthermore—

“We do not believe current investment levels in the short term in the UK for large synchronous generation are sufficient to mitigate these risks in the medium term.” (Written submission, SPEN)

128. **The Committee has reflected on the findings of its predecessor committee’s security of supply report, including that the approach “must respond to the trilemma – the interests of security, cost and decarbonisation – and manage this in a way that maintains the confidence of public, government and industry”. The report went on: “The key question, we were told, was whether Scotland needs more generation or better interconnection. The Scottish Government seems to favour the former approach, National Grid the latter. Greater clarity, more dialogue and ideally an alignment of policy are necessary if we are to avoid deadlock”.**

129. **That call for clarity, dialogue and, ideally, alignment is as relevant now as it was 18 months on, particularly as we move closer to Brexit and whatever impact that may have for energy security. A considered, credible and balanced approach to Blackstart is not only desirable; it is crucial.**